

Import Exposure and Inequality

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This study examines whether increasing openness to trade flows over the last few decades has had an identifiable effect on rising inequality in Canada. Rising imports from China have led to strong measured impacts on labour markets in the United States, including falling wages and employment. A separate literature has shown the links between labour market outcomes and self-reported health status in both the U.S. and Canada. We seek to add to the literature by examining imports and income inequality in Canada.

Autor, Dorn, and Hanson (2013) and Autor, Dorn, Hanson, and Song (2014) use data at the level of the commuting zone to measure the exposure to Chinese imports of local labour markets. Their papers find that increased Chinese imports into the U.S. since 1990 have resulted in increased unemployment, reduced labour force participation, and reduced earnings.

A separate literature has established a strong link between labour market conditions and health which could stem from increased uncertainty, leading to higher stress and worsening health outcomes, or from the state of the economy. Charles and DeCicca (2008), for example, examine the relationship between local labour market conditions and individual-level health outcomes and health behaviours in the United States. They find that a rise in the unemployment rate at the level of the metropolitan statistical area leads to weight gains and worsening mental health for some groups. Using Canadian data, Ariizumi and Schirle (2012) examine the relationship between unemployment and mortality at the provincial level, finding that a rise in the unemployment rate lowers the mortality rate. Lang, McManus, and Schaur (2016), who use the Autor et al. technique to measure the U.S. local labour market impact of Chinese imports, find that increased imports from China worsen mental and physical health of American workers.

As information on the potentially negative consequences of increasing trade on labour markets and health emerges, Canada has moved forward with negotiating trade

agreements throughout the world, such as the Comprehensive Economic and Trade Agreement with the EU. Other countries, by contrast, have seen the rise of populism and a movement away from globalization. The study proposed herein will use methodologies developed in the Autor et al. (2013) papers to examine whether increasing trade has a relationship with growing inequality in Canada. We will measure the import exposure of Canadian workers at the Economic Region (ER) (a standard geographic unit for analyzing regional economic activity) to determine how import exposure at the local level affects income inequality at that level and consequently at the provincial and national levels.

The study requires the measurement of the change in import exposure (from single and multiple countries) at the level of the ER, using employment data from the master files of the Labour Force Survey (LFS) supplemented by publicly available import data from Industry Canada. The change in import exposure (CIE) is calculated as follows:

$$\sum_j \frac{L_{ijt}}{L_{it}} \frac{\Delta M_{jt}^C}{L_{jt}},$$

where i refers to the ER, j refers to the industry (NAICS), t refers to time, and C refers to Canada. That is, the proportion of the labour force in each industry as a percentage of all employment is multiplied by the change in imports in the industry divided by the labour force in that industry, and then summed up for each ER. Given the possible endogeneity of Canadian import exposure, we follow Autor et al. (2013) in instrumenting for the change in Chinese imports to Canada with the change in Chinese imports to eight other developed countries.

To establish the relationship between CIE and income inequality, we will use master files of the Canadian Community Health Survey (CCHS) to provide income measures and necessary control variables. The measure of CIE at ER will be imported into the CCHS data and matched at the ER level. The relationship between ER-level income inequality (the distribution within ER) and import exposure will then be estimated. We use the CCHS data rather than more traditional data used to study income inequality because of its large sample sizes (~130,000 observations), its long cross-sectional history when combined with the National Population Health Surveys (spanning 30 years and possibly longer if the GSS health surveys can be matched), and the plethora of control variables available. The core content of the health surveys has remained fairly similar over time and include income, education, age, immigrant status, occupational status and industrial codes.

Income is available at the personal and household level in the CCHS. The one drawback

is that respondents are asked to report the amount of their before-tax income from all sources. To calculate post-tax income, we will use the Canadian Tax and Credit Simulator (CTaCS) (Milligan 2016) to estimate taxes for each household. Inequality measures will be estimated using post-tax household income.

Generalized Entropy class GE(a), Atkinson class A(e), the Gini coefficient, and the percentile ratios p_{90}/p_{10} and p_{75}/p_{25} will be estimated for each ER; the multiple measures will provide information on how inequality changes when focusing on different parts of the income distribution. Bootstrapping all standard errors, we regress each inequality measure on the CIE and other control variables (e.g., mean age, mean education, percent lone-parent families, etc.) to ascertain whether changes in CIE over time and across ERs have a significant relationship with inequality.

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